

TWO NEW SPECIES OF *STRATIODRILUS*,  
*S. AEGLAPHILUS* AND *S. PUGNAXI*  
(ANNELIDA: HISTRIOBDELLIDAE)  
FROM CHILE

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*Abstract.*—Two new species of Histriobdellidae (Annelida) from Chile of the genus *Stratiodrilus* are described: *Stratiodrilus aeglaphilus* from the gill chamber of *Aegla laevis* and *Stratiodrilus pugnaxi* from the gill chamber of *Parastacus pugnaxi*.

A key for the identification of all known species of *Stratiodrilus* is given and their known biogeographic distribution is described.

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The family Histriobdellidae includes *Histriobdella* and *Stratiodrilus*, epizoic annelids living in the branchial chamber or on the eggs of marine and freshwater crustaceans, respectively. Histriobdellidae have the following characteristics: small, vermiform, head conspicuous, clearly separated from rest of body, coelom reduced, sexes separate, pharyngeal sac present, adhesive glands at the posterior end of the body, and male with copulatory organ. We agree with Borradaile and Potts (1958) that these characteristics, together with the absence of parapodia and chaetae, indicate an evolutionary specialization typical of parasites.

Haswell (1900) proposed the genus *Stratiodrilus*, which now includes epizoic freshwater animals of circumantarctic distribution with species found in Australia, Tasmania, the southern region of South America, and Madagascar. They possess a conspicuous head, a trunk of five body segments and a caudal region. The head carries an unpaired median and two pairs of lateral tentacles, followed by paired conic retractile locomotive appendages. The trunk has three paired lateral cirri and in addition in the males, retractile gonopodia. The caudal region carries cirri, which in the genus *Stratiodrilus* are of great taxonomic significance.

The high degree of specialization of *Stratiodrilus*, together with its peculiar geographical distribution, supports the geological relationships supposed to have existed between Australia, Madagascar and South America.

The life cycle of *Stratiodrilus*, entirely confined to the branchial chamber of the host, differs substantially from that of most known polychaetes. However, the significance of this feature remains to be studied in detail. Further knowledge of the life cycle, taxonomy and ecology of *Stratiodrilus* will certainly help in tracing phylogenetic relationships between host freshwater crustaceans of the Southern Hemisphere.

To date, four species of *Stratiodrilus* have been described: *S. tasmanicus* Haswell, 1900; *S. novahollandiae* Haswell, 1913; *S. haswelli* Harrison, 1928, and *S. platensis* Cordero, 1927. We describe herein two new species of *Stratiodrilus*: *S. aeglaphilus* and *S. pugnaxi* and give a key for the identification of all known species of *Stratiodrilus*.

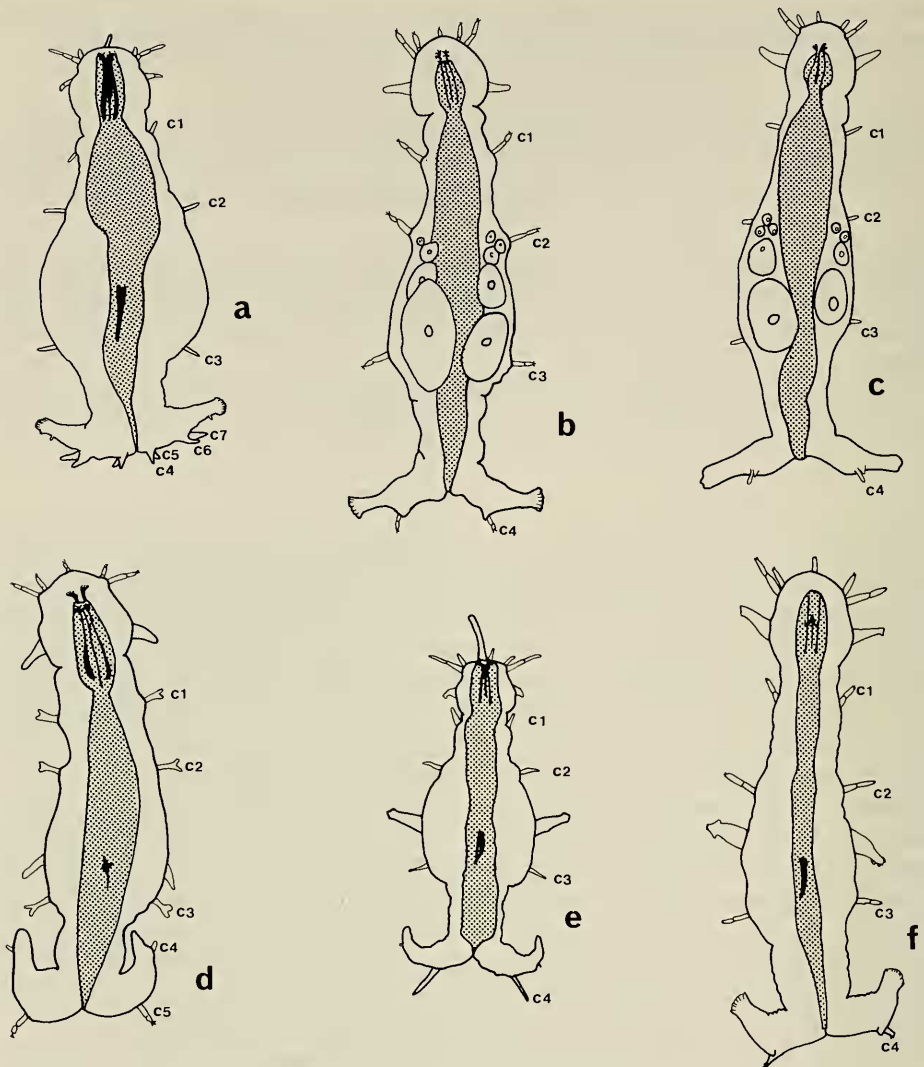


Fig. 1. The species of *Stratiodrillus*, habitus: a, *S. pugnaxi*; b, *S. novaehollandiae*; c, *S. platensis*; d, *S. haswelli*; e, *S. aeglaphilus*; f, *S. tasmanicus*. c1–c3, lateral cirri; c4–c7, caudal cirri.

#### *Stratiodrillus aeglaphilus*, new species

*Diagnosis.*—Adult males reach an average total length of 750  $\mu\text{m}$  (maximum 1200  $\mu\text{m}$ ); females average 500  $\mu\text{m}$  (maximum 1000  $\mu\text{m}$ ). The mandibular apparatus of both sexes has an average length of 90  $\mu\text{m}$ . As in other species, the trunk bears 3 pairs of lateral unsegmented simple cirri on the second, third, and fifth trunk segments. Each of the caudal appendages of the posterior region has a simple cirrus and a small tubercle, well separated, along the caudal border (Fig. 1e, Table 1).

*Differences from other species of the genus.*—*Stratiodrillus aeglaphilus* is the smallest of the species so far known. It has a maximum total length of 1200  $\mu\text{m}$

Table 1.—Geographical distribution of *Stratiodrillus*.

Species	Host	Geographic distribution
<i>S. tasmanicus</i> Haswell, 1900	<i>Astacopsis franklinii</i> (Gray) <i>Astacopsis franklinii tasmanicus</i> Erickson	Tasmania, Hobart.
<i>S. novaehollandiae</i> Haswell, 1913	<i>Astacopsis serratus</i> Shaw	New South Wales. Streams 2000 to 3000 feet in blue mountains. Hawkesbury River System. Cataract River and London River. Post Hacking Waterfall Creek. Middle Harbour, Port Jackson, Pitt water off Broken Bay. Murrumbidgee River of Murray River System.
<i>S. platensis</i> Cordero, 1927	<i>Aegla laevis</i> * (Latreille)	Uruguay. Stream Solís Chico, Departamento de Canelones, Arroyo Miguelete.
<i>S. haswelli</i> Harrison, 1928	<i>Astacoides madagascariensis</i> , Milne Edwards	Madagascar.
<i>S. aeglaphilus</i> , n. sp.	<i>Aegla laevis</i> (Latreille)	Central Chile. Río Maipo.
<i>S. pugnaxi</i> , n. sp.	<i>Parastacus pugnax</i> (Poëppig)	Southern Chile, Reumén (Valdivia).

\* The available evidence (Schmitt 1942) indicates that two species of *Aegla* are present in Uruguay: *A. platensis* Schmitt and *A. uruguayana* Schmitt; whereas *A. laevis* has only been reported present in Central Chile (Bahamonde and López 1963).

in the male and 1000  $\mu\text{m}$  in the female. Their simple unsegmented lateral cirri differ from the bifurcate ones of *S. haswelli* and the bisegmented ones of *S. tasmanicus* and *S. novaehollandiae*. *Stratiodrillus aeglaphilus* differs from *S. platensis* in having only one pair of caudal cirri.

*Material examined*.—Río Maipo, Chile, 33°45'S, 70°45'W, from branchial chamber of *Aegla laevis laevis* Latreille. Holotype: M.N.H.N. AN-2001 (Museo Nacional de Historia Natural) Santiago, Chile, Peñaflo tributary of Río Maipo, Chile. Paratypes: M.N.H.N. AN-2003, 2 males and 2 females.

#### *Stratiodrillus pugnaxi*, new species

*Diagnosis*.—The average length of the adult male is 1200  $\mu\text{m}$  (maximum 1360  $\mu\text{m}$ ) and that of the female is 1100  $\mu\text{m}$  (maximum 1180  $\mu\text{m}$ ). It has the longest mandibular apparatus with an average length of 430  $\mu\text{m}$ . The 3 pairs of lateral cirri are simple, unsegmented and clearly ciliated at their distal ends.

The caudal region has 4 paired retractile cirri: the first 2 pairs are highly retractile and located lateral and close to the anus. One pair is dorsal and the other is ventral. When the dorsal pair of caudal cirri is fully extended, it becomes bifurcate. The other 2 pairs of cirri are located distally on the caudal region (Fig. 1a, Table 1).

*Differences from other species of the genus*.—The most distinctive feature of *S. pugnaxi*, is the number of caudal cirri: 4 pairs in *S. pugnaxi* and 1–2 pairs in the other species.

*Material examined*.—Chile (Valdivia): Reumén, 39°45'S, 73°45'W. In the bran-

chial chamber of *Parastacus pugnax*. Holotype: Male, M.N.H.N. AN-2002, Reumén 50 km, Valdivia, Chile. Paratypes: M.N.H.N. AN-2004, 5 males and 5 females.

#### Key to the Species of *Stratiodrillus* Haswell, 1900

- 1( 2) One or two pairs of caudal cirri ..... 3  
 2( 1) Four pairs of caudal cirri ..... *S. pugnaxi*, n. sp. (Fig. 1a)  
 3( 4) Two pairs of caudal cirri ..... 5  
 4( 3) One pair of caudal cirri ..... 7  
 5( 6) Caudal cirri bisegmented ... *S. novaehollandiae* Haswell, 1913 (Fig. 1b)  
 6( 5) Caudal cirri unsegmented ..... *S. platensis* Cordero, 1927 (Fig. 1c)  
 7( 8) Lateral cirri bifurcate ..... *S. haswelli* Harrison, 1928 (Fig. 1d)  
 8( 7) Lateral cirri non-bifurcate ..... 9  
 9(10) Lateral cirri unsegmented ..... *S. aeglaphilus*, n. sp. (Fig. 1e)  
 10( 9) Lateral cirri bisegmented ..... *S. tasmanicus* Haswell, 1900 (Fig. 1f)

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